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The c-Jun NH₂-terminal kinase (JNK) group of MAP kinases are activated by exposure of cells to environmental stress. The role of JNK in the brain was examined by targeted disruption of the gene that encodes the neuronal isoform JNK3. It was found that JNK3 is required for the normal response to seizure activity. Methods of screening for molecules and compounds that decrease JNK3 expression or activity are described. Such molecules or compounds are useful for treating disorders involving excitotoxicity such as seizure disorders, Alzheimer's disease, Huntington disease, Parkinson's disease, and ischaemia.

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